

WHAT IS CLAIMED IS:

1. A sheet folding apparatus, comprising:
 - a fold blade;
 - a clamp movable to engage the fold blade; and
 - a fold blade receptacle having two flexible spring members biased toward one another by pre-loading material of the spring members, wherein the fold blade and the fold blade receptacle are movable toward one another to fold a sheet of material.
2. The apparatus of Claim 1, wherein the fold blade receptacle further comprises a support, wherein the two spring members each have a fixed end fixed to the support and a free end.
3. The apparatus of Claim 2, wherein the free ends of the two spring members are cantilevered and biased toward one another.
4. The apparatus of Claim 2, wherein center portions of the spring members between the fixed and free ends are biased to contact the fold blade when the fold blade and receptacle are moved toward each other.

5. The apparatus of Claim 1, wherein the spring members are formed of metal.

6. The apparatus of Claim 1, wherein the spring members have a friction reducing coating.

7. The apparatus of Claim 1, further comprising a fold roller mounted on each of the spring members.

8. The apparatus of Claim 1, wherein the clamp is elastically mounted to the fold blade receptacle.

9. The apparatus of Claim 1, wherein each spring member comprises multiple spring fingers.

10. The apparatus of Claim 9, wherein the clamp is positioned in a space between two fingers.

11. The apparatus of Claim 1, wherein the clamp is positioned in a slot in the spring members.

12. The apparatus of Claim 1, wherein the fold blade is positioned in a plane which passes between the spring members.

13. The apparatus of Claim 1, wherein the receptacle is movable along a linear path orthogonal to the sheet material to be folded.

14. A sheetwise booklet maker including the apparatus of Claim 1, wherein the booklet maker includes a sheet transport path configured to transport individual sheets through a sheetwise trimming apparatus and through the folding apparatus in a sheetwise manner, and to transport the individual sheets to a binding station.

15. An apparatus for folding sheet material, comprising:

- a fold blade;
- clamping means for clamping a sheet against the fold blade;
- folding means for folding the sheet over the fold blade, the folding means including two flexible spring members for receiving the fold blade between the fingers; and
- drive means for moving at least one of the fold blade and the folding means into a position where the fold blade is between the two flexible spring members and the sheet is folded over the fold blade and between the fingers.

16. The apparatus of Claim 15, wherein the fold blade receptacle further comprises a support, wherein the two spring members each have a fixed end fixed to the support and a free end.

17. The apparatus of Claim 16, wherein the free ends of the two spring members are cantilevered and biased toward one another.

18. The apparatus of Claim 16, wherein center portions of the spring members between the fixed and free ends are biased to contact the fold blade when the fold blade and receptacle are moved toward each other by the drive means.

19. The apparatus of Claim 15, wherein the spring members are formed of metal.

20. The apparatus of Claim 15, further comprising a fold roller mounted on each of the spring members.

21. The apparatus of Claim 15, wherein each spring member comprises multiple spring fingers.

22. The apparatus of Claim 21, wherein the clamping means is positioned in a space between the two fingers.

23. The apparatus of Claim 15, wherein the clamping means is positioned in a slot in the spring members.

24. The apparatus of Claim 15, wherein the fold blade is positioned in a plane which passes between the spring members and the folding means is movable along a linear path orthogonal to the sheet material to be folded.

25. A sheetwise booklet maker including the apparatus of Claim 15, wherein the booklet maker includes a sheet transport path configured to transport individual sheets through a sheetwise trimming apparatus and through the folding apparatus in a sheetwise manner, and to transport the individual sheets to a binding station.

26. A method for folding sheet material, comprising the steps of:
feeding a sheet into an area between a fold blade and a fold blade receptacle;
clamping the sheet against the fold blade with a clamp; and

folding the sheet by moving the fold blade and the fold blade receptacle relative to one another to form a fold in the sheet by a biasing force pre-loaded in a material the fold blade receptacle.

27. The method of Claim 26, wherein the fold is formed by moving the fold blade receptacle relative to the fold blade such that the fold blade and the sheet material pass between two spring biased members of the fold blade receptacle.

28. The method of Claim 26, wherein the step of folding includes forming a course fold with cantilevered free ends of the spring biased members.

29. The method of Claim 26, wherein the step of folding forms a fine fold with contacting center portions of the spring biased members.

30. The method of Claim 26, wherein the step of folding includes flexing the spring biased members flex apart due to contact with the sheet supported by the fold blade.

31. The method of Claim 26, wherein each spring biased member includes a fold roller and the fold is formed by pinching the sheet against the fold blade with the fold rollers.

32. A sheet folding apparatus, comprising:

a fold blade;

a clamp movable to engage the fold blade;

a plurality of sequentially activated members movably mounted on each side of the clamp for folding a sheet; and

an activation system for advancing the sequentially activated members to fold the sheet, wherein the members farthest from the fold blade are activated first.

33. The apparatus of Claim 32, wherein the activation system includes a plurality of cams mounted on a cam shaft for advancing the sequentially activated members.

34. The apparatus of Claim 32, wherein the clamp is movable to engage the fold blade by a cam mounted on the cam shaft.